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EXAMINER	
SAUNDERS JR, JOSEPH	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/840,196	BAILEY, KELLY D.	
	Examiner	Art Unit	
	Joseph Saunders	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 May 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 May 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This is the initial office action based on the communications filed May 6, 2004. Claims 1 – 26 are currently pending and considered below.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 26 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 26 recites "A carrier wave signal that includes data for performing actions, comprising:...", however, in reference to the Specification on page 8 lines 7 – 16 it is stated that the instructions are encoded using a carrier wave signal and is communicated over a network. Therefore, claim 26 is not statutory because communicating instructions via a network is performed using a signal, which is a nonstatutory natural phenomena. Claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage, or the strength of a magnetic field, define energy or magnetism, per se, and as such are nonstatutory natural phenomena. O'Reilly, 56 U.S. (15 How.) at 112-14. Moreover, it does not appear that a claim reciting a signal encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in § 101. First, a claimed signal is clearly not a "process" under § 101 because it is not a series of steps. The other three § 101 classes of machine, compositions of matter and manufactures "relate to structural

entities and can be grouped as 'product' claims in order to contrast them with process claims." 1 D. Chisum, Patents § 1.02 (1994). The three product classes have traditionally required physical structure or material.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, 13, 16, 21, and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawamoto (US 6,361,439 B1), hereinafter Kawamoto.

Claim 1: Kawamoto discloses a method for providing spatial sound data associated with an object in a scene for a virtual environment, comprising: determining at least one of position, distance and direction for the object in regard to a point of view in the scene (Figure 2 Step 2); recording spatial sound data in at least two channels of an audio file associated with the object, wherein the recorded spatial sound data is based at least in part on at least one of position, distance, and direction of the object in regard to the point of view in the scene (Figure 2 Step 2 and Figure 3); and playing the spatial sound data in at least one of the at least two channels of the audio file associated with the object, wherein the playing of the spatial sound data simulates sound associated with the object from the point of view in the scene (Figure 2 Step 4).

Claim 2: Kawamoto discloses the method of claim 1, wherein the point of view is at least one of a character in the scene, a third person perspective, and another character in the scene ("listening position in virtual game space," Column 2 Lines 1 – 8).

Claim 13: Kawamoto discloses the method of claim 1, wherein the virtual environment is at least one of a video game, chat room, and a virtual world ("game", Kawamoto).

Claim 16: Kawamoto discloses a server (game machine) for enabling the playing of spatial sound data associated with an object in a scene in a virtual environment (Figure 1), comprising: a memory (audio data memory unit 3) for storing data; and an audio engine (main controller 1) for performing actions, including: enabling the determining of at least one of position, distance and direction for the object based at least in part on a point of view in the scene and a type of the object (Figure 2 Step 2); enabling the recording of spatial sound data in at least two channels of an audio file associated with the object, wherein the recorded spatial sound data is based at least in part on at least one of position, distance, and direction of the object; (Figure 2 Step 2 and Figure 3) and enabling the playing of the spatial sound data in at least one of the at least two channels of the audio file associated with the object, wherein the playing of the spatial sound data simulates sound associated with the object from the point of view in the scene (Figure 2 Step 4).

Claim 21: Claim 21 is substantially similar in scope to claim 16 and therefore rejected on the same grounds.

Claim 26: Claim 26 is substantially similar in scope to claims 16 and 21 and therefore rejected on the same grounds.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 3 – 5 and 14, 17, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawamoto in view of Nakagawa (US 6,760,050 B1), hereinafter Nakagawa.

Claim 3: Kawamoto discloses the method of claim 1, but does not disclose the method further comprising determining a type of the object based at least in part on the point of view in the scene. Nakagawa discloses a method of producing sound in a virtual environment and discloses determining the type of object based in part on the coordinates and then uses the type, for example a sound-reflecting object or wall, and the coordinates to generate the appropriate sound data (Figure 3). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to

incorporate the steps taught by Nakagawa into the invention of Kawamoto thereby allowing for sounds particular to a respective object to be audible from prescribed positions and from prescribed directions (Column 14 Lines 48 – 64).

Claim 4: Kawamoto and Nakagawa disclose the method of claim 3, wherein if the type of the object is at least one of stationary and slow moving ("wall", Nakagawa Figure 3), further comprising recording spatial near sound data in one channel of the audio file and recording spatial far sound data in another channel of the audio file (Kawamoto Figure 3).

Claim 5: Kawamoto and Nakagawa disclose the method of claim 4, further comprising employing a low pass filter to generate spatial far sound data and employing a high pass filter to generate spatial near sound data (In Column 1 Lines 60 – 66, Kawamoto discloses attenuating high frequencies and amplifying low frequencies using a digital signal processor, therefore it is inherent that the digital signal processor employs the low and high pass filters necessary to achieve the aforementioned process).

Claim 14: Kawamoto discloses a method for recording spatial data for sound associated with an object in a scene for a virtual environment, comprising: determining at least one of position distance and direction for the object in regard to the point of view in the scene (Figure 2 Step 2); recording spatial sound data in at least two channels of an audio file associated with the object, wherein the recorded spatial sound data is

based at least in part on at least one of position, distance, and direction of the object in regard to the point of view in the scene (Figure 2 Step 2 and Figure 3). Kayamoto does not disclose determining a type of the object based at least in part on a point of view in the scene. Nakagawa discloses a method of producing sound in a virtual environment and discloses determining the type of object based in part on the coordinates and then uses the type, for example a sound-reflecting object or wall, and the coordinates to generate the appropriate sound data (Figure 3). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the steps taught by Nakagawa into the invention of Kawamoto thereby allowing for sounds particular to a respective object to be audible from prescribed positions and from prescribed directions (Column 14 Lines 48 – 64).

Claims 17 and 22: Claims 17 and 22 are substantially similar in scope to claim 4 and therefore are rejected on the same grounds.

7. Claims 6 – 8, 18, 19, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawamoto and Nakagawa in view of Redmann et al. (US 5,633,993), hereinafter Redmann.

Claim 6: Kawamoto and Nakagawa disclose the method of claim 3, determining the type of the object (Nakagawa Figure 3), further comprising recording spatial sound data in different channels of an audio file (Kawamoto Figure 3). Kawamoto and Nakagawa do

not discloses that if the type of the object is directional, recording spatial forward sound data in one channel of the audio file and recording spatial rearward sound data in another channel of the audio file. Redmann discloses another method of processing sound in a virtual world and teaches, "Preferably, master controller 102 is provided with the capability to cross-fade a sound from an input channel of spatial sound processor 112 to one of the non-localized channels, and vice versa. This extends the dynamic allocation capabilities of the master controller to enable the transfer of a long, continuous sound (e.g., airplane engine noise) from the background to a localized position as the control program deems the sound to rise in priority (based, for example, on the proximity of the sound source to the viewer or the importance of the sound to the creation of a 3-D illusion). The reverse process is useful for freeing a spatial sound processor channel as a sound's priority diminishes," Column 9 Lines 13 – 26. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the technique disclosed by Redmann of cross-fading in the invention of Kawamoto and Nakagawa thereby allowing for realistic Doppler effects.

Claim 7: Kawamoto, Nakagawa, and Redmann disclose the method of claim 3, wherein if the type of the object is fast moving (e.g., airplane engine noise), further comprising employing the distance, position and direction of the object in regard to the point of view ("proximity") (Redmann Column 9 Lines 13 – 26) to record spatial approaching sound data in one channel of the audio file and record spatial rearward sound data in another channel of the audio file (Kawamoto Figure 3).

Claim 8: Kawamoto, Nakagawa, and Redmann disclose the method of claim 7, wherein the spatial approaching sound data is played in one sound amplification device and the spatial rearward sound data is played in another sound amplification device ("headphone amplifier 130 and amplifier 118, Redmann Figure 1).

Claims 18 – 19 and 23 – 24: Claims 18 – 19 and 23 – 24 are substantially similar in scope to claims 6 and 7 and therefore are rejected on the same grounds.

8. Claims 9 – 12, 15, 20, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawamoto in view of Redmann.

Claim 9: Kawamoto discloses the method of claim 1, but does not disclose the method further comprising mixing the spatial sound data in the at least two channels of the audio file based at least in part on distance, position and direction of the object in regard to at least in part the point of view and a type of the object. Redmann discloses another method of processing sound in a virtual world and teaches, "Preferably, master controller 102 is provided with the capability to cross-fade a sound from an input channel of spatial sound processor 112 to one of the non-localized channels, and vice versa. This extends the dynamic allocation capabilities of the master controller to enable the transfer of a long, continuous sound (e.g., airplane engine noise) from the background to a localized position as the control program deems the sound to rise in

priority (based, for example, on the proximity of the sound source to the viewer or the importance of the sound to the creation of a 3-D illusion). The reverse process is useful for freeing a spatial sound processor channel as a sound's priority diminishes," Column 9 Lines 13 – 26. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the technique disclosed by Redmann of cross-fading in the invention of Kawamoto and Nakagawa thereby allowing for realistic Doppler effects.

Claim 10: Kawamoto and Redmann disclose the method of claim 9, but do not disclose wherein the mixing further comprises performing at least one of linear mixing, parametric mixing, and spectrum analyzer mixing. The office takes official notice that it is well known in the art that when mixing or cross-fading sounds as disclosed by Redmann to use parametric equalizers during the mixing process to provide the benefit of boosting or cutting lows or highs during the mix. It would have been obvious to one of ordinary skill in the art at the time of the invention to use this type of mixing setup in the system of Kawamoto and Redmann to thereby achieve the effect of attenuating high frequencies and amplifying low frequencies using a digital signal processor as disclosed by Kawamoto in Column 1 Lines 60 – 66.

Claim 11: Kawamoto and Redmann disclose the method of claim 9, wherein the mixing further comprises performing at least one of cross fading and blending of the at least two channels of the audio file ("cross-fade", Redmann Column 9 Lines 13 – 26).

Claim 12: Kawamoto discloses the method of claim 1, but is silent as to the type of audio file and therefore does not disclose wherein the audio file further includes a format of at least one of Windows Audio Video (WAV), Audio Interchange File Format (AIFF), MPEG (MPX), Sun Audio (AU), Real Networks (RN), Musical Instrument Digital Interface (MIDI), QuickTime Movie (QTM), and AC3. Redmann discloses another method of processing sound in a virtual world and teaches the use of MIDI (Column 5 Lines 50 – 64). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the MIDI file format as disclosed by Redmann in the invention of Kawamoto since MIDI was well known in the art at the time and offers the benefits of standardized format.

Claim 15: Kawamoto discloses a method for playing spatial sound data associated with an object in a scene for a virtual environment, comprising: recording sound data in at least two channels of an audio file based at least in part on distance, position and direction of an object in regard to a point of view in the scene (Figure 2 Step 2 and Figure 3); and playing the spatial sound data in at least one of the at least two channels of the audio file associated with the object, wherein the playing of the spatial sound data is based at least in part on distance, position and direction of the object in regard to the point of view in the scene, and wherein the playing of the spatial sound data enables the simulation of sound associated with the object from the point of view in the scene (Figure 2 Step 4). Kawamoto does not disclose mixing spatial sound. Redmann

discloses another method of processing sound in a virtual world and teaches, "Preferably, master controller 102 is provided with the capability to cross-fade a sound from an input channel of spatial sound processor 112 to one of the non-localized channels, and vice versa. This extends the dynamic allocation capabilities of the master controller to enable the transfer of a long, continuous sound (e.g., airplane engine noise) from the background to a localized position as the control program deems the sound to rise in priority (based, for example, on the proximity of the sound source to the viewer or the importance of the sound to the creation of a 3-D illusion). The reverse process is useful for freeing a spatial sound processor channel as a sound's priority diminishes," Column 9 Lines 13 – 26. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the technique disclosed by Redmann of cross-fading in the invention of Kawamoto and Nakagawa thereby allowing for realistic Doppler effects.

Claims 20 and 25: Claims 20 and 25 are substantially similar in scope to claims 9 and therefore are rejected on the same grounds.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Saunders whose telephone number is (571) 270-1063. The examiner can normally be reached on Monday - Thursday, 9:00 a.m. - 4:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571) 272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JS
November 10, 2007

SINH TRAN
SUPERVISORY PATENT EXAMINER